

14 to recite the proper spelling of diisobutylaluminum.

2. Rejection of Claims 1-16 Under 35 U.S.C. § 112

The Office Action states claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action states,

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the actual compounds which are used which contain Mg, Ti, Cl and OR, particularly the Cl and OR group have dangling valences which would be unstable. The elemental components themselves when combined would not necessarily produce a catalytic compound. It is unclear as to what the metes and bounds applicant means to claim by only enumerating the element rather than the compounds or formulations for which the actual catalyst is comprised.

RESPONSE

Applicant traverses the rejection of claims 1-16.

There are no missing elements in claims 1-16 for catalyst components. The catalyst components are well defined in the claims in terms of their atomic components, a defined group OR, and given ratios thereof in a manner that one skilled in the art would understand.

In particular, it is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all the elements operate concurrently toward the

desired result. *Ex parte Nolden*, 149 USPQ 378, 380 (Bd. Pat. App. 1965). See § MPEP 2172.01.

Additionally, claims should be allowed which define the patentable subject matter with a reasonable degree of particularity and distinctness. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. The requirement to 'distinctly' claim means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles. . . . Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must the claim be declared indefinite. Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 (Fed. Cir. 2004). See MPEP § 2173.02.

Therefore, all elements are present. Additionally, Applicant believes the metes and bounds of claims 1-16 are particularly and distinctly set forth as required by 35 U.S.C. § 112. In light of the above, claims 1-16 are therefore believed to be patentable. Accordingly, reconsideration and withdrawal of the rejection is requested.

3. Rejection of Claims 1-5 and 7-16 Under 35 U.S.C. §103(a)

The Office Action states claims 1-5 and 7-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Menconi, et al. (WO 00/58368) in view of Zambon, et al. (U.S. 6,451,726). In particular, the Office Action states,

Menconi, et al. disclose and claim a catalyst comprising titanium, magnesium, chlorine and a carboxylate with overlapping ranges of ratios and a method of polymerizing olefins using said catalyst (page 53, line 1 - page 60, line 14) wherein the titanium disclosed is at least 80% in the 3+ valence state (abstract; page 6, lines 3-7). Menconi, et al. fail to disclose a diether group as the electron donative compound. Zambon, et al. cures the deficiency of Menconi, et al. by disclosing a similar composition having the same ratio of Ti/Mg wherein the electron donative compound may be either a 1,2-diether or 1,3-diether compound. Zambon, et al. disclose a catalyst component comprising MgX_2 (col. 2, l. 52; col. 3, l. 3-5, 24-27), $Ti(OR)_{n-y}X_y$ (wherein X is Cl and y is 1; col. 2, l. 35-33), diethers (col. 4, l. 8-col. 7, l. 4) and alkyl aluminum compounds (col. 7, l. 45-col. 8, l. 3) having a Ti/Mg ratio of 0.01-3, preferably 0.1-2.5 (col. 9, l. 17-18). In the diether, the R^{IV} groups have the same number of carbon atoms (col. 4, l. 34-37) as are those claimed in the instant claims and R^I and R^{II} may form a cycloalkyl, aryl, alkylaryl or arylalkyl compound (col. 4, l. 21-22, 33-34) or are linear or branched alkyls as are those claimed in the instant claims. It would have been obvious to one of ordinary skill in the art to modify the catalyst composition of Menconi, et al. to use the diether compounds of Zambon, et al. rather than the carboxylate compound because the carboxylate is more likely to have unwanted side reactions due to the active hydrogens on the carboxylate compound.

RESPONSE

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under § 103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at

issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Menconi, et al. merely discloses a solid component of a catalyst having several components, including a carboxylate.

Zambon, et al. merely discloses catalysts having several components, including a Ti compound having an OR group and a halogen on a Mg halide support.

The Examiner is combining the solid component of the catalysts minus the carboxylate disclosed in Menconi, et al. with Zambon, et al. in an attempt to establish a *prima facie* case of obviousness in order to reject presently pending claims 1-5 and 7-16.

However, Menconi, et al. discloses the carboxylate of the solid component as being a critical aspect of the catalysts since the, "solid component is characterized . . . by a very particular electronic and coordinative environment which has so far not been observed in catalysts . . . containing carboxylic groups." (See page 11, lines 15 - 20) Additionally, Menconi, et al. acknowledges, "Although it is not possible at the moment to formulate any theory

explaining these differences and their influence on the behaviour of the respective catalysts, it has been found that the latter prove to be much more disadvantageous with respect to the catalysts of the present invention, both in terms of polymerization activity of the olefins and in terms of molecular weight of the polymers produced, especially in high temperature processes." (See page 13, lines 7 - 15).

Menconi, et al. clearly discloses that any advantages the solid components demonstrate are due to the solid components having the particular ratios of the disclosed materials within the components, and, in particular, that the solid components have a carboxylate present. In fact, Menconi, et al. eludes to the notion that the particular configuration that the carboxylates give the solid components disclosed therein make the catalyst components more effective than previous solid components. Thus, to remove the carboxylate, which Menconi, et al. clearly considered an extremely critical and essential part of the solid components is clearly modifying the principle operation of Menconi, et al., which seems improper. See MPEP § 2143.01 V and VI.

Additionally, since Menconi, et al. clearly states the carboxylate within the solid components is critical and an essential element of the solid components, one would not modify Menconi, et al. by removing the carboxylate as suggested by the Examiner.

In addition to the Examiner incorrectly modifying a critical aspect of Menconi, et al. in an attempt to arrive at the presently

claimed catalyst components, Applicant traverses the Examiner's implication that the compositions disclosed in Zambon, et al. are "similar compositions" to those currently claimed.

In light of the above, claims 1-16 are therefore believed to be patentable over Menconi, et al. in view of Zambon, et al. Accordingly, reconsideration and withdrawal of the rejection is requested.

4. Rejection of Claim 6 Under 35 U.S.C. §103(a)

The Office Action states claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Menconi, et al. (WO 00/58368) in view of Zambon, et al. (U.S. Patent 6,451,726) in further view of Kao, et al. (U.S. 5,200,502). In particular, the Office Action states,

Zambon, et al. disclose a catalyst component, catalyst and process for the polymerization of olefins as disclosed herein above. Zambon, et al. do not specifically disclose a 1,2-diether species. Kao, et al. cures the deficiency of Zambon, et al. by disclosing that 1,2-diethers are used in Ziegler Natta catalyst compositions (col. 2, l. 5-30). It would have been obvious to one of ordinary skill in the art to substitute a 1,3-diether for that of a 1,2-diether. Kao, et al. disclose that the 1,2-diether is used as a deactivation agent in the catalyst preparation but it would have been obvious to one of ordinary skill in the art to synthesize the composition and then add the co-catalyst separately to re-active the catalyst composition so that catalyst is not poisoned prematurely.

RESPONSE

U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under § 103 by

(1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Claim 6 depends from claim 1 and includes all of the limitations thereof.

Additionally, Kao, et al. does not remedy the deficiencies of Menconi, et al. and Zambon, et al. as discussed *supra*. Accordingly, claim 6 is therefore believed to be patentable over Menconi, et al. in view of Zambon, et al. in further view of Kao, et al. Accordingly, reconsideration and withdrawal of the rejection is requested.

5. DOUBLE PATENTING REJECTIONS

Applicant kindly requests all of the provisional double patenting rejection be held in abeyance.

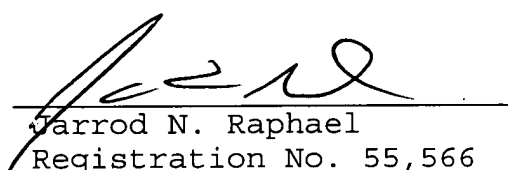
CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all rejections and allow all pending claims 1-16. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner with any questions or comments.


Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on March 16 2006.


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